

REMARKS

Claims 1-3, 16, 17, 40, 41, 60-68, 72-78 and 82-86 are pending in this application. Applicants appreciate the Office Action's indication that claims 4-15 contain allowable subject matter.

By this Amendment, claim 1 is amended to incorporate the allowable subject matter recited in claim 4. Claim 4 is canceled. Claims 6-9, 14, 15, 17 and 62 are amended to depend from claim 1. Thus, claim 1, and claims 2, 3, 6-9, 14-17, 40, 41, 60, 62, 64, 65, 67 and 68 depending therefrom are placed in condition for allowance.

Allowable claim 5 is rewritten in independent form. Thus, claim 5 and claims 10-13 are 63 depending therefrom are placed in condition for allowance.

Independent claims 72, 75 and 82 are amended to recite additional features disclosed in the specification. Claims 18-39, 42-59, 61, 66, 69-71 and 79-81 are withdrawn due to the finality of the Election of Species Requirement.

Reconsideration of the application is respectfully requested.

The Examiner is respectfully requested to acknowledge receipt of the certified copy of the priority documents filed with the PCT application, of which the present application is a national stage.

The Office Action rejects claims 1-3, 16, 17, 40, 60, 62-65, 67, 68 and 82-86 under 35 U.S.C. §102(b) over U.S. Patent No. 5,654,566 to Johnson; rejects claim 41 under 35 U.S.C. §103(a) over Johnson in view of U.S. Patent Publication No. 2001/0031547 to Ohno et al. ("Ohno"). These rejections are respectfully traversed.

As discussed above, claim 1 is amended to incorporate the allowable subject matter recited in claim 4. Allowable claim 5 is rewritten in independent form. Thus, claims 1 and 5, and claims 2, 3, 16, 17, 40, 41, 60, 62-65, 67, 68 and 83-86 depending therefrom are patentable over Johnson.

Regarding claim 82, claim 82 is amended to recite additional features, as outlined above. As amended, claim 82 recites that one of the ferromagnetic source and the ferromagnetic drain is formed of a ferromagnetic metal, and the other thereof is formed of a half metal. Johnson does not disclose or suggest this additional feature, as recited in claim 82.

In particular, Johnson discloses a device having a ferromagnetic film 110 and a ferromagnetic film 116. See Fig. 4. However, Johnson does not disclose or suggest that one of the ferromagnetic source and the ferromagnetic drain is formed of a ferromagnetic metal, and the other thereof is formed of a half metal. Thus, Johnson does not disclose each and every element recited in claim 82.

For at least the above reasons, withdrawal of the rejection of claims 1-3, 16, 17, 40, 41, 60, 62-65, 67, 68 and 82-86 under 35 U.S.C. §102(b) and §103(a) is respectfully requested.

The Office Action rejects claims 72 and 73 under 35 U.S.C. §102(e) over Ohno; and rejects claim 74 under 35 U.S.C. §103(a) over Ohno in view of Johnson. (Claims 77 and 78 are believed to be rejected also under this rejection, because claims 77 and 78 depend from claim 72). These rejections are respectfully traversed.

Claim 72 is amended to recite additional features, as outlined above. As amended, claim 72 recites that a source and a drain that formed with ferromagnetic semiconductors are contacted with the semiconductor layer. Ohno does not disclose or suggest the additional features, as recited in claim 72.

In particular, Ohno discloses a device in which ferromagnetic semiconductor layers 57 are connected to a semiconductor layer 52 through non-ferromagnetic semiconductor layers 56. See Fig. 5. Ohno does not disclose or suggest that a source and a drain that formed with

ferromagnetic semiconductors are contacted with the semiconductor layer. Therefore, Ohno does not disclose each and every element recited in claim 72.

Also, Johnson does not supply the subject matter lacking in Ohno. Thus, Ohno and Johnson, either individually or in combination, do not disclose or suggest the subject matter recited in claim 72, and claims 73, 74, 77 and 78 depending therefrom. Accordingly, withdrawal of the rejection of claims 72-74, 77 and 78 under 35 U.S.C. §102(e) and §103(a) is respectfully requested.

The Office Action rejects claim 75 under 35 U.S.C. §102(e) over U.S. Patent No. 6,753,562 to Hsu et al. ("Hsu"); and rejects claim 76 under 35 U.S.C. §103(a) over Hsu in view of Johnson. (The Office Action also lists claims 77 and 78 under this rejection. However, claims 77 and 78 should not have been rejected in this rejection, because claims 77 and 78 do not depend from claim 75. As discussed above, the rejection of claims 77 and 78 is discussed with the rejection of claim 72, from which claims 77 and 78 depend). These rejections are respectfully traversed.

Claim 75 is amended to recite additional features, as outlined above. In particular, as amended, claim 75 recites that a source that is formed with a first pn junction between a first ferromagnetic semiconductor and a semiconductor layer that is of different conductive types. The semiconductor layer has a channel. Hsu does not disclose or suggest these features, as recited in claim 75.

In particular, Hsu discloses a device in which a pn junction is formed between a source 103 and channel 100, Hsu does not teach that a pn junction is formed between the first ferromagnetic semiconductor and the semiconductor layer that has channel layer. Therefore, Hsu does not disclose or suggest a source that is formed with a first pn junction between a first ferromagnetic semiconductor and a semiconductor layer that is of different conductive

types, wherein the semiconductor layer has a channel. Hence, Hsu does not disclose each and every element recited in claim 75.

Also, Johnson does not supply the subject matter lacking in Hsu. Thus, Hsu and Johnson, either individually or in combination, do not disclose or suggest the subject matter recited in claim 75, and claim 76 depending therefrom.

For at least the above reasons, withdrawal of the rejection of claims 75 and 76 under 35 U.S.C. §102(e) and §103(a) is respectfully requested.

Claims 42-59, 69-71 and 79-81 are each patentable at least in view of the patentability of claims 1 and 72, from which they respectively depend, as well as for additional features they recite. Accordingly, rejoinder and allowance of claims 42-59, 69-71 and 79-81 are respectfully requested.

In view of the foregoing, it is respectfully submitted that this application is in condition for allowance. Favorable reconsideration and prompt allowance are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number set forth below.

Respectfully submitted,



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